

Work Order ID 100765

May 1, 2013 7:15:34 AM

100765

Page 1

Item ID: 646.9711

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Blade

Start Date: 4/30/13 Start Qty: 30.00

30

Cust Item ID:

Required Date: 5/10/13 Req'd Qty: 30.00

30

Customer:

Reference:

Approvals: Process Plan: 

Date: 13-05-1 Tooling:

Date:

Run Start ***NR1***

QC:

Date: SPC (Y/N):

Date:

Stop ***NR2***

Work Center ID Description

Draw Nbr

Revision Nbr

646.9700

N/C

100

0.00

100

BAND SAW

Bandsaw

Memo

0.00

Jeaspa Bandsaw

Cut Blank at 4.625"

DAS
02
89

13-05-26 (130)

110

0.00

110

HAAS CNC VERTICAL MACHINING #1

HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

1-Machine per folio FB135

DWG REV: N/C

FOLIO REV: 4A

DAS
02
89

13-05-27 (130)

PD

13/05/28

2- deburr and break all sharp edges except otherwise noted

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data											
Equip/Tooling											
Operator											
Material											
Setup											
Other											
Process											
Supplier											
Training											
Unapproved											

FAULT CATEGORY										
Landing Gear			General							
<input type="checkbox"/> Bending	<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> Cracks	<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Cuffs	<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Turning Sequence	<input type="checkbox"/> Wave/Twist in Tube
<input type="checkbox"/> Bend	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Burrs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Countersink	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Drawing	<input type="checkbox"/> Finish	<input type="checkbox"/> Folio
<input type="checkbox"/> Grain	<input type="checkbox"/> Hardware	<input type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Misread	<input type="checkbox"/> Offset	<input type="checkbox"/> Out of Calibration	<input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions
<input type="checkbox"/> Ovalized	<input type="checkbox"/> Over/Under tolerance	<input type="checkbox"/> Part Incorrect	<input type="checkbox"/> Part Lost/Missing	<input type="checkbox"/> Part Moved	<input type="checkbox"/> Positioned Wrong	<input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced	<input type="checkbox"/> Temperature/Cure	<input type="checkbox"/> Weld	<input type="checkbox"/> Wrong Stock Pulled
						<input type="checkbox"/> Other				

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30

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID Tool # Plan Accept Reject Reject Insp.
Code Qty Qty Number Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00

120

QC

Memo

0.00

Quality Control

DACT 13-05-27
02
83

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.00

Quality Control

Final 13-05-30 30

140

Outsource process - Heat Treat

0.00

140

Outsource I

Memo

0.00

Outsource process - Heat Treat

HEAT TREAT AS PER DWG, SEE NOTE #3

ISSUE P/O: P10: 20029 mitean.

CD 13/05/30 (30)

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector		
Doc/Data <input type="checkbox"/>											
Equip/Tooling <input type="checkbox"/>											
Operator <input type="checkbox"/>											
Material <input type="checkbox"/>											
Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY									
Landing Gear		General		Grain		Pressure/Forced		Temperature/Cure	
<input type="checkbox"/> Bending	<input type="checkbox"/> Centre Not Concentric to O/S	<input type="checkbox"/> Cracks	<input type="checkbox"/> Crushed/Crimped	<input type="checkbox"/> Cuffs	<input type="checkbox"/> Heat Treat	<input type="checkbox"/> Inspection Strip in Tube	<input type="checkbox"/> Ripples in Bend	<input type="checkbox"/> Torque Waves in Extrusion	<input type="checkbox"/> Turning Sequence
<input type="checkbox"/> Wave/Twist in Tube	<input type="checkbox"/> Bend	<input type="checkbox"/> BOM/Route	<input type="checkbox"/> Broken/Damaged	<input type="checkbox"/> Burrs	<input type="checkbox"/> Contamination	<input type="checkbox"/> Countersink	<input type="checkbox"/> Cut Too Short	<input type="checkbox"/> Drill Holes	<input type="checkbox"/> Drawing
	<input type="checkbox"/> Finish	<input type="checkbox"/> Folio	<input type="checkbox"/> Grain	<input type="checkbox"/> Hardware	<input type="checkbox"/> Inspection Incomplete	<input type="checkbox"/> Instructions Incomplete/Unclear	<input type="checkbox"/> Maintenance	<input type="checkbox"/> Mislabeled	<input type="checkbox"/> Misread
	<input type="checkbox"/> Offset	<input type="checkbox"/> Out of Calibration	<input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized	<input type="checkbox"/> Over/Under tolerance	<input type="checkbox"/> Part Incorrect	<input type="checkbox"/> Part Lost/Missing	<input type="checkbox"/> Part Moved
	<input type="checkbox"/> Positioned Wrong	<input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Other						

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Page 3

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Cust Item ID:

Required Date: 5/10/13 Req'd Qty: 30.00

30

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

150

Receive & Inspect for Damage & Mat'l Certs

0.00

150

Packaging

Memo

0.00

Packaging

Rec'd 13/5/13 (30)

155

QC5- Inspect part completeness to step on W/O

0.00

155

QC

Memo

0.00

Quality Control

*0.00
B6-7*

30

160

Spray Painting per QSI005.4.2

0.00

160

Spray Paint

Memo

0.00

Spray Painting

PRIME AS PER DWG. SEE NOTE #4

PRIMER BATCH:

*N/A
Jul 13-05-30
For Testing*

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
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Doc/Data <input type="checkbox"/>											
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Operator <input type="checkbox"/>											
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Setup <input type="checkbox"/>											
Other <input type="checkbox"/>											
Process <input type="checkbox"/>											
Supplier <input type="checkbox"/>											
Training <input type="checkbox"/>											
Unapproved <input type="checkbox"/>											

FAULT CATEGORY			
Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions	<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other

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Page 4

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Start Qty: 30.00

30

Cust Item ID:

Required Date: 5/10/13

Req'd Qty: 30.00

30

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***Source ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

ID

Plan
CodeAccept Reject Reject Insp.
Qty Qty Number Stamp

170

QC14- Inspect Spray Paint

0.00

170

QC

Quality Control

Memo

0.00

180

Identify as per dwg & Stock Location:

0.00

180

Packaging

Packaging

Memo

0.00

190

QC21- Final Inspection - Work Order Release

0.00

190

QC

Quality Control

Memo

0.00

DD

W130607

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data <input type="checkbox"/>									
Equip/Tooling <input type="checkbox"/>									
Operator <input type="checkbox"/>									
Material <input type="checkbox"/>									
Setup <input type="checkbox"/>									
Other <input type="checkbox"/>									
Process <input type="checkbox"/>									
Supplier <input type="checkbox"/>									
Training <input type="checkbox"/>									
Unapproved <input type="checkbox"/>									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio	<input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions
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<input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge	<input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Picklist Print

May 1, 2013 7:15:34 AM

Page 1

Work Order ID: 100765

Parent Item: 646.9711

Parent Item Name: Blade

Start Date: 4/30/13

Required Date: 5/10/13

Start Qty: 30.00

Required Qty: 30.00

Comments: IPP REV:A NEW ISSUE 12/09/24 JFS VERIFY BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MSTEEL-A2- B0.500X1.250		Purchased	No			100	f	102.4500	0.386	12.189474			

AISI A2 TOOL STEEL BAR, 0.500 X 1.250

25 13-05-26

Location

Loc Qty

Loc Code

5-AT000

102.4500001

12.1894

0.0000001

125350

102.45

12.19

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

Work Order: _____ Part No. _____ NCR No. _____				DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/>		AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div>					
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APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 03838				SHEET 1 OF 1	
	DWG NO. 646.9700	REV: NC	PREPARED BY B. PETERS	DATE: 04/01/13	EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.	
	DWG TITLE: CUTTER SUB ASSY					
APPROVED BY: ENGR <i>[Signature]</i>		MFG <i>David Barber</i>	QC <i>[Signature]</i>	EFF: CURRENT ORDER		
TRANSACTION CODES (TC) A-ADD C-CREATE R-REVISE D-DELETE		REASON: REVISED NOTES.			ECR: D-13-030	

IS

100765
R/B-05-1

2

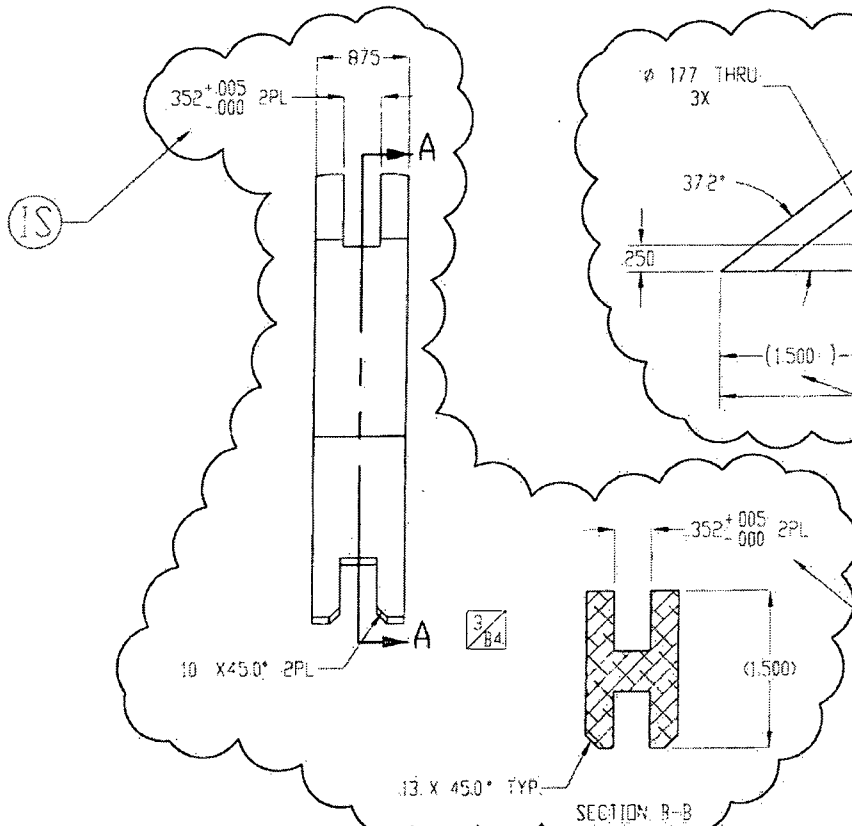
FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III,
CLASS 2, COLOR BLACK;
PRETREAT PRC-DESOTO PR-148 ADHESION PROMOTER;
~~PRIME IAW MIL-P-23377 J TYPE I CLASS N; 1-2 MIL MAX~~

SHEET 1, NOTES IS:

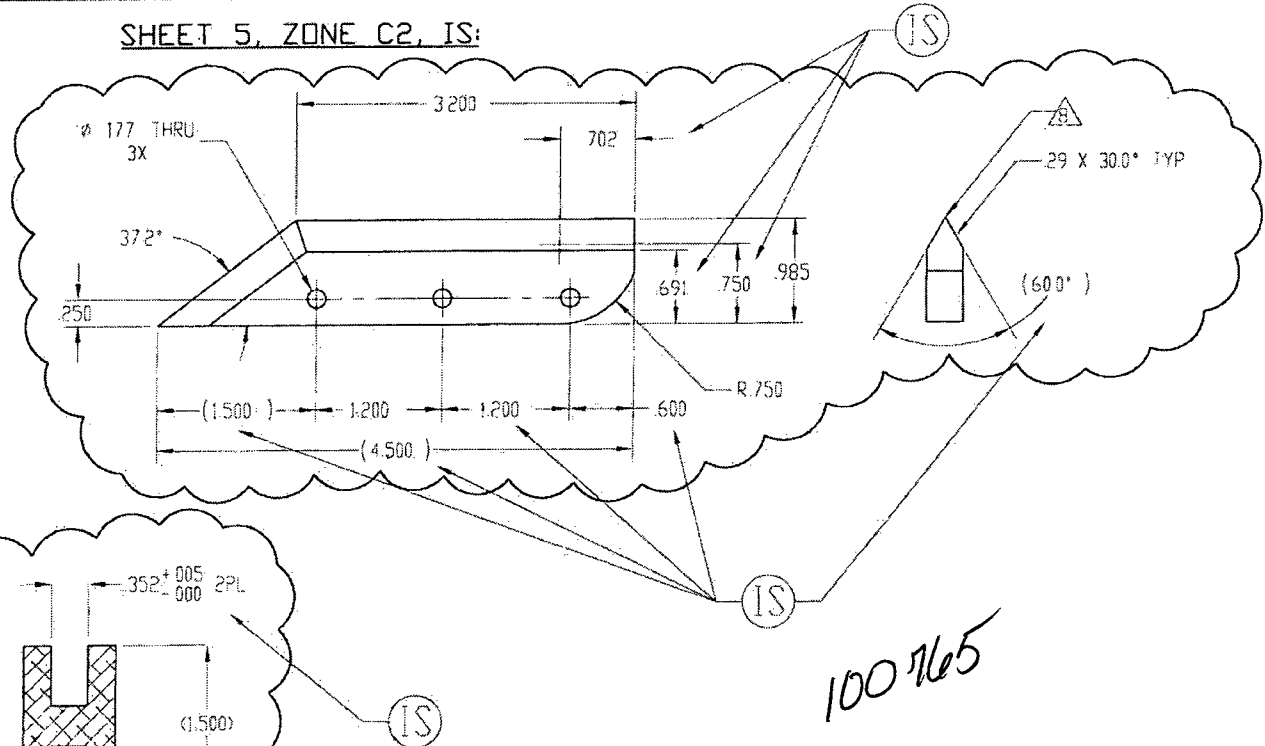
DOCUMENTS EFFECTED:	<input type="checkbox"/> RFMS <input type="checkbox"/> MDL <input type="checkbox"/> INSTALL INSTRU <input type="checkbox"/> ICA <input type="checkbox"/> BOM	CHANGE CATEGORY <input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR	DER REVIEW REQUIRED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO
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APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 02744				SHEET 1 OF 1	
	DWG NO. 646.9700	REV: N/C	PREPARED BY S. HUFF	DATE: 01/07/10	EFFECT ON DWG <input type="checkbox"/> INC. <input checked="" type="checkbox"/> UNINC.	
	DWG TITLE: CUTTER SUB ASSY					
	APPROVED BY: ENGR <i>[Signature]</i>	MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER		
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE						
REASON: REVISED SCREW LENGTH, CHANNEL WIDTHS & DIMENSIONING SCHEME SHEET 5.						

SHEET 2, ZONE C6, IS:



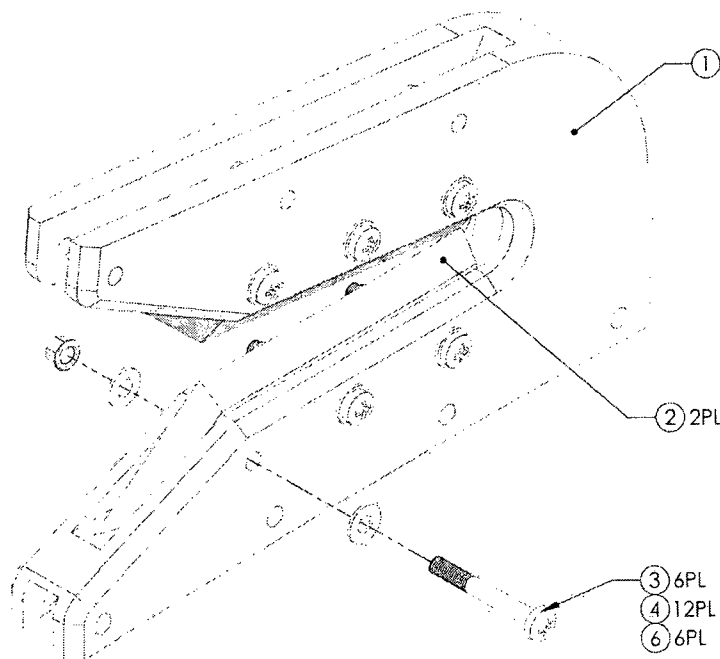
SHEET 5, ZONE C2, IS:



3	R	601.3157	12	SCREW	MS27039-0818
			.9701		
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION
DOCUMENTS EFFECTED:				<input type="checkbox"/> MDL <input type="checkbox"/> INSTALL INSTRUC <input checked="" type="checkbox"/> ICA <input type="checkbox"/> FMS <input checked="" type="checkbox"/> BOM	CHANGE CATEGORY <input type="checkbox"/> MAJOR <input checked="" type="checkbox"/> MINOR
				DER REVIEW REQUIRED <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	

CHANGES			
REV	DESCRIPTION	DATE	APPROVED
	LAST PHOTOGRAPHED BY		INC
INC	INITIAL RELEASE	05/09/05	P. BROS. CO

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III,
CLASS 2, COLOR BLACK,
CARDINAL 4860-50 PRETREATMENT PRIMER
PRIME IAW MIL-P-23377J TYPE I CLASS N: 1-2 MIL MAX
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N: 1-2 MIL MAX
5. DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
6. IDENTIFY IAW MPP-120
7. APPLY F/N 5 AS REQUIRED TO ALL FAYING SURFACES OF F/N 2 UPON ASSEMBLY
8. CUTTING EDGE INTENDED TO BE SHARP. DO NOT BREAK SHARP EDGE



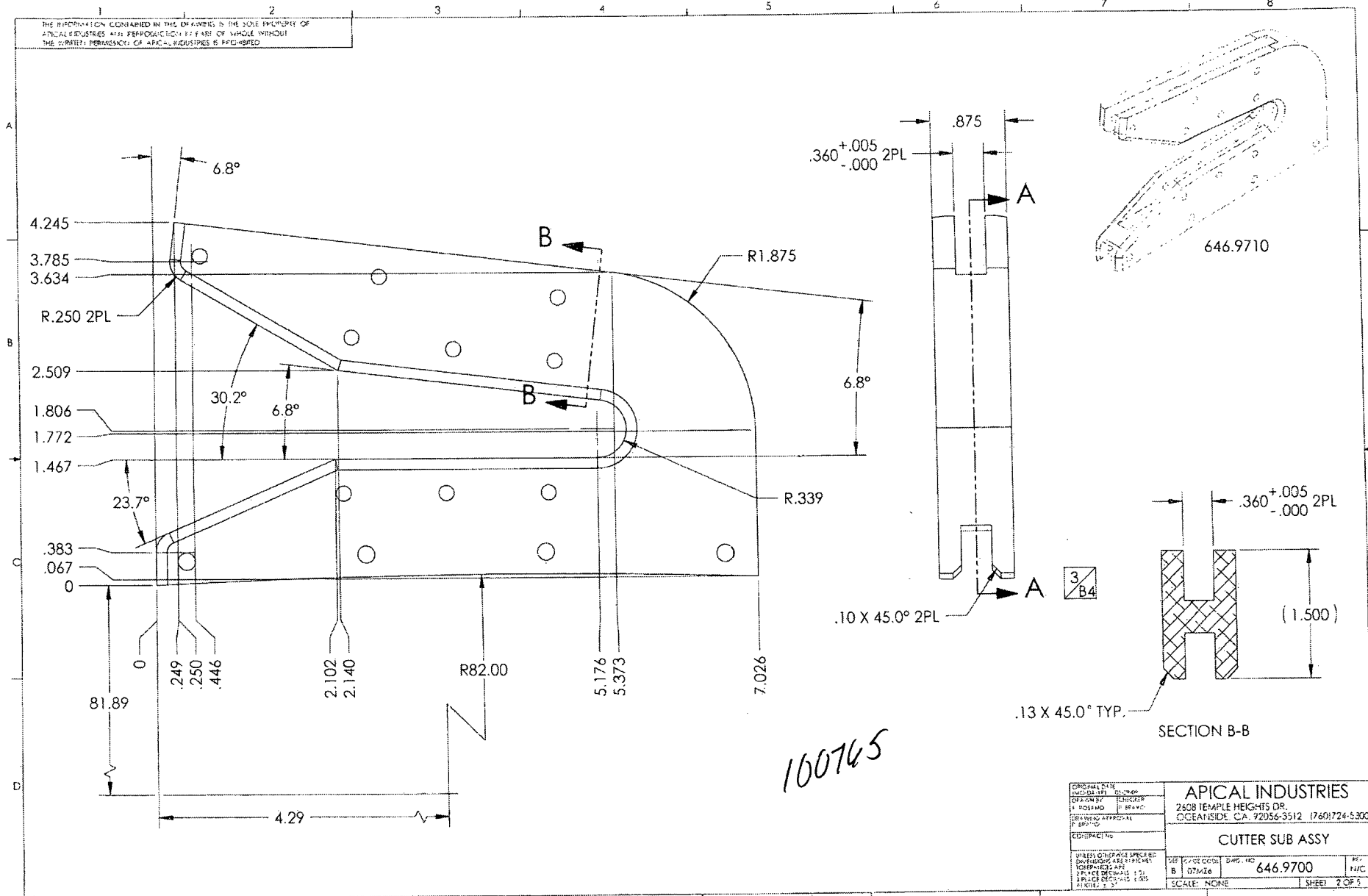
646.9701

UNINCORPORATED ECN(S)

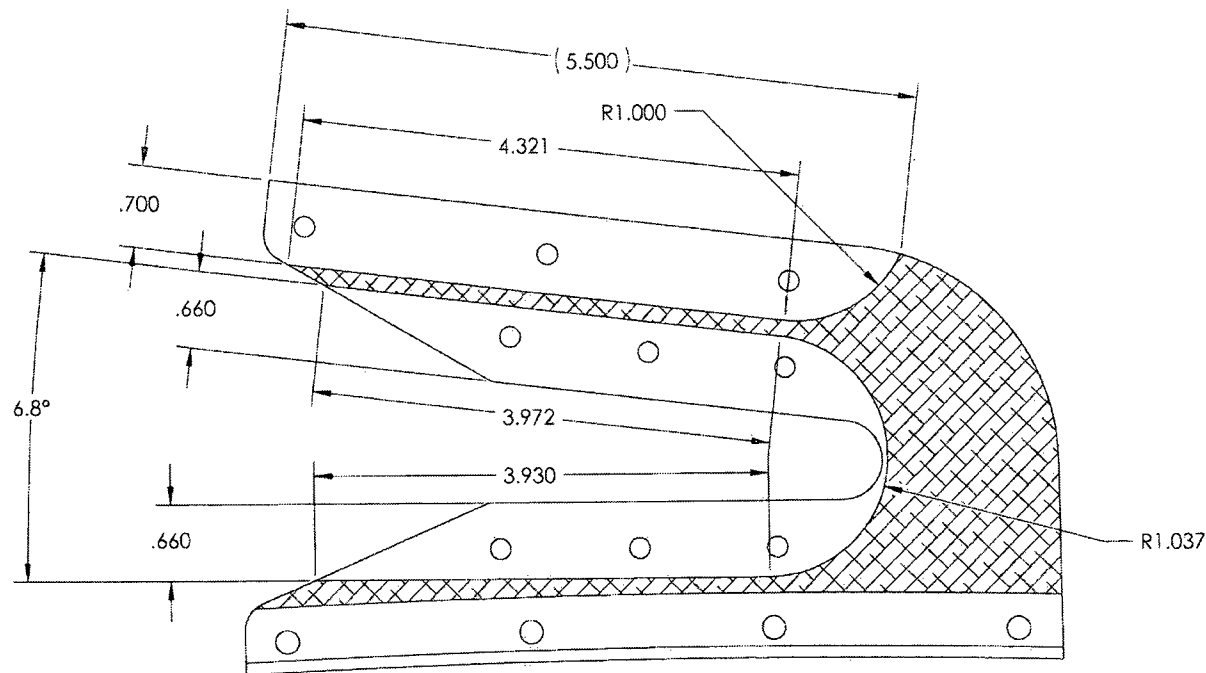
02744, 03838

	6	6	601.1541	LOCKNUT	MS2-67205	
A/R	5	5	601.2045	RTV. LOCITE 598		
12	4	4	601.2764	WASHER	MS1110748031	
6	3	3	601.2765	SCREW	MS257029-AM10	
2	2	2	646.9711	BLADE		△
1	1	1	646.9710	BODY		△
			646.9701	CUTTER SUB ASSY		
	QTY	FIGED #	PART #	DESCRIPTION	MAIL	SPEC
QTY				PARTS LIST		
NEXT ASSY (5)				APICAL INDUSTRIES		
646.9700				2408 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5020		
SPECIAL INSTRUCTIONS: NO. 20-20 DIMENSIONS: 1/2" DIA. 1/2" DIA. MATERIAL: 304 STAINLESS STEEL FINISH: POLISHED TOLERANCES: .001" DIA. .001" DIA. SURFACE: 32 RMS WEIGHT: APPROX. 1.0 LB. PARTS LIST APPROVAL: (B) DATE: 10/10/80 CHECKED: JRM				CUTTER SUB ASSY		
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 DECIMALS: .001" DIA. 2 DECIMALS: .001" DIA. 1 DECIMAL: .001" DIA. SURFACE: 32 RMS				OCT 1980 DATE CODE E 07M26 SCALE: NONE DWG. NO. 646.9700 TYP. N/C		
				1 SHEET OF 1		

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES AND REPRODUCTION IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED



THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.



SECTION A-A 2/C8

100745

ORIGINAL DATE (MAY 1981) 05-1981 DRAWN BY: J. B. BAKER P. B. BAKER CHECKED APPROVAL P. B. BAKER DATE: 05-1981 CONTRACT NO.		APICAL INDUSTRIES 2408 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES DECIMALS ARE 2 PLACE DECIMALS ± .005 ANGLES ± .5°		SHEET: 8 CAGE CODE: 07M26 SCALE: NONE	REV: 1 N/C: 646.9700 SHEET 3 OF 5

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

.340^{+.000}
-.005

Ø.177 THRU
3X

37.2°

.250

1.500

1.200

2.400

4.500

3.200

.500

.985

R.750

646.9711

8

.29 X 30.0° TYP.

160765

ORIGINAL DATE: 05-20-06		APICAL INDUSTRIES	
DRAWN BY: E. BOUTER		2608 TEMPLE HEIGHTS DR.	
CHECKED BY: E. BOUTER		OCEANSIDE, CA 92056-3512 (760) 724-5300	
DRAWING APPROVED BY: E. BOUTER		CUTTER SUB ASSY	
DATE: 05-20-06			
UNLESS OTHERWISE SPECIFIED		SIZE: 1/4" X 1/2" X 1/4" X 1/4"	REV: 0
DIMENSIONS ARE IN INCHES		DATE: 07/26/06	646.9700
TOLERANCES ARE:		SCALE: NONE	SHEET: 5 OF 5
FRACTIONS: 1/16" TO 1/8"			
DECIMALS: 1/1000"			
ANGLES: 1/4° TO 1/2°			

FIRST ARTICLE INSPECTION CHECKLIST

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO20029**

Purchase Order Date 5/30/2013

PO Print Date 5/30/2013

Page Number 1 of 1

Order From :

VC-MET004

METCOR INC.
560 BOUL. ARTHUR SAUVE
SAINT-EUSTACHE, QC J7R 5A8
CA

Contact Name

Vendor Phone 450 473 1884

Vendor Fax 450 491 5498

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr 10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Ship To :

DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FXED
67305/30

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	100765	646.9711 blade	5/31/2013 Yes	30.00	FedEx PI collect	\$0.0000	\$0.00
Special inst: FINISH: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS PART ARE MADE FROM AISI A2 TOOL STEEL PLEASE NOTE: DETAIL C OF C REQUIRED							
3	100765	DETAIL C OF C	5/31/2013 Yes	1.00	FedEx PI collect	\$48.0000	\$48.00

PO Total: \$48.00

Change Nbr: 1

Change Date: 5/30/2013

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required - **YES** NO

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
186809	1	72230

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

LIVRÉ À /Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
PO 20029		A2	2013/5/31	FEDEX

QUANTITÉ Quantity	No. PIÈCE / Part No.	NOM DE LA PIÈCE / Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
----------------------	-------------------------	--------------------------------	---	-----------------

30 64.9711

(30) BLADE

REFERENCE: 100765

MATERIAL: AISI A2 TOOL STEEL

8,

CONTENANT: 1 BOÎTE DE CARTON

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
BOITE DE CARTON	1	

CERTIFICAT

EMPAQUETAGE Packing	
------------------------	--

QUANTITÉ EXPÉDIÉE / Quantity Shipped :

30

POIDS EXPÉDIÉ / Weight Shipped :

8,00

QUANTITÉ RESTANTE / Quantity Remaining :

0

POIDS RESTANT / Weight Remaining :

0,00

CERTIFICAT

QUANTITÉ EXPÉDIÉE /Quantity Shipped: 30

POIDS EXPÉDIÉ / Weight Shipped : 8,00

Signature:

Date:

EXPÉDIÉ LE / Shipped On : 2013/06/07



Metcor Inc.

560, boul. Arthur-Sauvé, St-Eustache (Québec) J7R 5A8
Tél. 450 473-1884
Télécopieur/Fax administration 450 491-5498
Télécopieur/Fax production 450 491-6454

Page 1 / 1

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
186809	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO 20029		A2		

SPÉCIFICATIONS DU PROCÉDÉ

processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC	30	59.0 - 61.0 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
30	8	84.9711 (30) BLADE REFERENCE: 100765 MATERIAL: AISI A2 TOOL STEEL CONTENANT: 1 BOÎTE DE CARTON

COMMENTAIRES / comments

CERTIFIÉ par / Certified by





DATE: 2013-06-07

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
186809	1

CLIENT / customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO 20029		A2		

SPÉCIFICATIONS DU PROCÉDÉ processing specifications

VAC HARDEN

HARDEN AND TEMPER

EXIGENCE / requirement	SPÉCIFICATIONS / specified	TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC	30	59.0 - 61.0 HRC

QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description
30	8	646.9711 (30) BLADE REFERENCE: 100765 MATERIAL: AISI A2 TOOL STEEL CONTENANT: 1 BOÎTE DE CARTON

Operation	Temp. spécifiée Specified Temp	Temps de tremp Spécifié Specified Soak Temp	Atmosphère	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
1.00 CONT. INIT.	LAVAGE		si nécessaire							
2.00 PREPARING	COMPTAGE									
3.00 PREHEAT 1	1200	0:30	VAC			393				
4.00 PREHEAT 2	1500	0:30	VAC							
5.00 VAC HARDE	1800	1 hrs 00 minutes	VAC		AZOTE					
6.00 TEMPER	400+/-10°F	2 hrs	air			616				
7.00 HARDN INS										

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
186809	1

CLIENT / customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

1

Operation	Temp. spécifiée Specified Temp	Temps de trempage Spécifié Specified Soak Temp	Atmosphere	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
8.00 FINAL INSP							06-07-2013			06-07-2013

COMMENTAIRES / comments

Le traitement thermique a été fait en utilisant des équipements en conformité avec la spécification demandée.

Toutes les opérations de traitement thermique ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés.

Aucun changement ou dérogation n'a été faite par rapport au traitement thermique demandé.

On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiés.

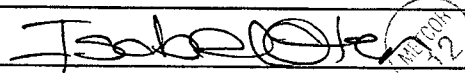
All the heat treatment processing performed on this order was accomplished using heat treatment equipment compliant with the requested heat treatment specification.

All the heat treatment operations were accomplished in accordance with the requested/required heat treatment specification and all required verifications test have been performed and documented.

No unauthorized changes or deviations to required heat treatment specifications or procedures have been performed.

We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

APPROUVÉ par / Approved by:



DATE: 2013-06-07

/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client./We certify that all the information on this report is exact and in accordance with the order requirements.